

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

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SOTER TECHNOLOGIES, LLC,

Plaintiff,

-against-

MEMORANDUM AND ORDER

IP VIDEO CORPORATION, A+ TECHNOLOGY
& SECURITY SOLUTIONS, INC., HALO SMART
SOLUTIONS, INC. & ADVANCE
CONVERGENCE GROUP, INC.

20 CV 2989 (GRB)(AKT)

Defendants.

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GARY R. BROWN, United States District Judge:

In this action, plaintiff Soter Technologies seeks recovery for purported infringement of U.S. Patent No. 10,699,549 (“the ’549 Patent”), which purportedly covers its “FlySense” product,

hailed as “the world’s first vape detecting sensor device.” DE 1 at 1. Both plaintiff and defendants purvey systems to school districts intended to remotely detect vaping and, amazingly, bullying, using a combination of technological devices. Upon request of the parties, the Court conducted an expedited *Markman* hearing, following a determination that claim construction issues may assist in the resolution of dispositive motions. This opinion follows.

Procedural History

Plaintiff commenced this action via the filing of a complaint on July 6, 2020. DE 1. Defendants filed an answer, along with a third-party complaint and counterclaims, shortly thereafter. DE 26, 36. At a conference, the Court denied, in part, a motion to dismiss certain claims, then set a briefing schedule for the balance of the motions. DE 46, 48. After further briefing, the Court set a schedule for claim construction discovery and briefing. Electronic Order dated December 9, 2020. After review of the parties’ motion to dismiss filings, the Court ordered those motions withdrawn pending claim construction. Electronic Order dated August 16, 2021. The parties filed a stipulation setting forth a joint disputed claims term chart, DE 67, and submitted briefs and evidence regarding claim construction. DE 72-74. The Court held a hearing on September 28, 2021.

Claim Construction Standards

Several years ago, then-district court Judge Joseph Bianco penned a cogent, thorough description of the applicable standard for a *Markman* hearing, which this Court adopts for the purposes of this decision:

Claim construction is “exclusively within the province of the court.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996). Such construction “begins and ends” with the claim language itself, *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998), but the court may consult extrinsic evidence “if needed to assist in determining the meaning or scope of technical terms in the claims,” *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed.

Cir. 1995); see *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996) (explaining that the court may rely on extrinsic evidence, including expert and inventor testimony, dictionaries, and learned treaties).

In construing the claim language, the court must begin with the principle that “the words of a claim ‘are generally given their ordinary and customary meaning.’” (*Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics*, 90 F.3d at 1582)). This ordinary and customary meaning “is the meaning that the [claim] term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” *Id.* at 1313. “[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Id.* at 1314. “In such circumstances general purpose dictionaries may be helpful.” *Id.* In other cases, “determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art.” *Id.* In those cases, “the court looks to those sources available to the public that show what a person of skill in the art would have understood the disputed claim language to mean.” *Id.* (internal quotation marks and citation omitted). These sources include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.*

When the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, the inventor's lexicography governs. *Id.* at 1316. Nevertheless, it is improper to read limitations from the specification into the claim. *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1368 (Fed. Cir. 2005) (“[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim ... we should never know where to stop.” (quoting *Phillips*, 415 F.3d at 1312)). Thus, the court “do[es] not import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment, unless the specification makes clear that ‘the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.’” *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (internal citations omitted).

Easyweb Innovations, LLC v. Twitter, Inc., 2016 WL 1253674, at *5 (E.D.N.Y. Mar. 30, 2016), *aff'd*, 689 F. App'x 969 (Fed. Cir. 2017). With this standard in mind, the Court turns to the disputed claim terms.

The '549 Patent

The subject patent, entitled “System And Method For Identifying Vaping And Bullying,” describes a detection system utilizing “an air quality sensor and a sound sensor for identifying vaping and bullying.” ’549 Patent, Pg. 10. The goals of this system include the following:

When bullying and/or vaping are identified, warnings or alerts are transmitted to registered users or clients without providing any indication of warnings to one or more persons who vape or bully at the site. In this way, one or more persons who bully or vape can be properly reported and appropriately supervised later. Further, one or more persons near the vaping or bullying can be effectively prevented from further harms.

Id., Col. 3: 38-48. The patent contains several independent claims, which are the most critical for this determination. For example, Claim 1 reads as follows:

1. A sensor system comprising:

an air quality sensor configured to detect air quality, the air quality sensor including a combination of sensors configured to sense air quality; and

a network interface configured to transmit a signal indicating abnormality matching signature of vaping, and

a controller configured to identify vaping based on the detected air quality,

wherein the vaping is identified when the detected air quality includes the abnormality matching signature.

Id., Col 13: 20-29. Claim 13 and 25 provide similar language describing fundamentally the same invention. Finally, Claim 6 (*inter alia*) relates to the sound sensor system used to detect bullying, which is of limited import in this dispute.

Discussion

1. *Signature*

In their joint disputed claim chart, counsel seemed to agree upon only one claim term – vaping – while quarreling over several others. However, based upon the submissions as well as the arguments of counsel, it became clear that only one concept proves critical: the meaning of “abnormality matching signature of vaping” and, more specifically “signature” as used in the independent claims. The remaining vaping detection disputes – including the construction of “air quality,” “air quality sensor,” and “identify vaping” – represent variants of this basic disagreement. As such, the Court will focus on the principal dispute. *See Interactive Wearables, LLC v. Polar Electro Oy*, 501 F. Supp. 3d 162, 171 (E.D.N.Y. 2020) (“Addressing every claim of a challenged patent individually is not necessary where multiple claims are substantially similar and linked to the same abstract idea. Thus, where the claims asserted in the patent contain only minor differences in terminology [but] require performance of the same basic process, they should rise or fall together.”) (citations and quotation marks omitted).

Taking the term “signature” as used in Claim 25, the plaintiff urges the Court to adopt the following, somewhat circular, definition: “a set of *one or more parameters* that provides an abnormality matching signature of vaping.” DE 67 at 12 (emphasis added). Defendants propose this interpretation: “detectable values of the properties and/or contents of air that include *temperature, hydrogen, and humidity values* that taken together indicate the presence of vaping.” *Id.* at 13 (emphasis added). The crux of these competing contentions is whether vaping is detected through the measurement of one variable (*e.g.*, hydrogen or, more generally, a gas), or whether the invention requires the measurement of three variables (*i.e.*, temperature, humidity and hydrogen). By way of background, counsel advised the Court that much of this conflict turns on whether the ’549 patent is limited to use of a gas detector (which requires measuring multiple variables,

including hydrogen, temperature and humidity) in the patented system, as compared to a particle detector, which measures solely hydrogen without the need for temperature and humidity readings.

Thus, the Court must discern the meaning of “signature” as used in Claims 1, 13 and 25. The language of the independent claims do not provide an express definition of “signature” or an “abnormality matching the signature of vaping” beyond the ordinary meaning of those words. While generally referring to a distinctive mark, “signature” carries the connotation of multiple variables used to confirm a positive identification, just as a forensic document examiner would inspect various elements – *e.g.*, the crossing of T’s, dotting of I’s or prominent connecting loops – when comparing two sets of handwriting. In fact, the use of “signature” as part of this invention proves counterintuitive in this context if the drafter meant anything other than multiple variables. As has been proffered to the Court, “gas” detectors search for a particular substance – in this case hydrogen – but require the measurement of temperature and humidity to ensure the accuracy of the reading. Particle detectors, by contrast, determine the presence of hydrogen without the need for other readings. Thus, it would seem, if the drafters intended reference to the latter technology, use of the word “hydrogen” or “gas,” rather than “signature,” would have been more appropriate.

Common usages of “signature” tend to confirm this conclusion. For example, the *Oxford English Dictionary* defines “signature” as “[a]ny typical physical or behavioural characteristic, pattern, or response by which an object, substance, etc., may be identified.” See “signature” at *oed.com*. The singular “characteristic” could be viewed as supporting plaintiff’s view, though the use of “pattern” seems more apropos here. Several usages cited, quite relevant to the kind of detection proffered here, fall squarely in defendants’ camp:

“1940 *R. Morrish Police & Crime-detection* xii. 114 All these marks, however minute in themselves, form the specific ‘signature’ or identity of any fire-arm.”

“1960 *Jrnl. Histochem. & Cytochem.* 8 288/1 Failure to demonstrate striking differences in ‘pH signature’ between analogous components of normal and carcinoma cells did not particularly surprise us.”

“1998 *Brit. Med. Jrnl.* 19 Dec. 1698/2 A polypharmacy. . . exploits the specific interactions and balances that constitute a neurochemical signature for any one particular brain region.”

Id. Each of these iterations, drawn from a half century of scientific literature, uses “signature” to describe examination of multiple indicia to confirm the identity of the object or substance under investigation. These etymological aids go far in helping interpret the ordinary meaning of the terms employed here. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (“Sensibly enough, our precedents show that dictionary definitions may establish a claim term’s ordinary meaning.”).

The balance of the patent disclosure puts any question to rest. Beginning with the dependent claims, the language of the patent proves telling. For example, Claims 2 and 14 state that “abnormality matching signature includes *a temperature range, a hydrogen range, and a humidity range.*” ’549 Patent, Col 13: 30-32, Col 14: 15-17. The patent disclosure is replete with similar references. “The signature includes a temperature range, a hydrogen range, and a humidity range.” Col. 2: 8-11 and 48-51. “Since vaping has a signature in temperature, humidity, and hydrogen ranges, vaping may be identified based on the signature.” Col. 5: 3-13. While some of these references relate to preferred embodiments, it is difficult for the reader to conclude, after reviewing the repeated references to these specific elements throughout the ’549 patent, that the vaping signature could mean anything other than a combination of measurements which include temperature, humidity and hydrogen levels.

Most importantly, though, the disclosure states: “Vaping may be detected by *specific range combination of humidity, hydrogen, and temperature, which is defined as signature* in this

disclosure.” Col. 9:21-2. As the Federal Circuit has held, a “claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history.” *CCS Fitness*, 288 F.3d at 1366. In this instance, plaintiff has done precisely that. The parties invite the Court to consider extrinsic evidence, such as the practicality of the use of particle detectors for plaintiff’s invention, the availability of algorithms to enable such applications, and data from other patent applications – all of which may further buttress this determination – but the Court need not reach these questions.

Based on the foregoing, the Court adopts the defendants’ proposed construction of “a signature” to wit: “detectable values of the properties and/or contents of air that include temperature, hydrogen, and humidity values that taken together indicate the presence of vaping.”

2. *Sound Detector*

The parties contest – to a limited degree – the meaning of the phrase “sound detector.” Plaintiff urges that the Court construe the phrase to mean “a sensor that detects sound levels in the environment.” DE 67 at 23. Defendants contend that the phrase not be further construed – that the plain meaning of the words suffice. Having seen nothing to suggest that further interpretation is required (or, indeed, the significance of the urged construction), the Court declines to further construe the term “sound detector.” *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015) (upholding district court that “declined to further construe the term because it was a ‘straightforward term’ that required no construction”).

Conclusion

Based on the foregoing, the Court adopts defendants’ proposed construction of “signature” as

used in the subject patent and declines to further construe the term “sound detector.”

SO ORDERED.

Dated: October 5, 2021
Central Islip, New York

/s/ Gary R. Brown
HON. GARY R. BROWN
UNITED STATES DISTRICT JUDGE